Policosanol – The Cholesterol-Lowering Supplement

By Ronald Steriti, NMD, PhD

It is estimated that 52% of total population have border-line high cholesterol levels (200 to 239 mg/dL) and about 21% have dangerously high levels of 240 or above. High levels of cholesterol are associated with increased cardiovascular risk.

- Low-density lipoprotein (LDL) —the "bad cholesterol"— carries cholesterol in the blood and is associated with a greater risk of heart attacks and strokes.
- High-density lipoprotein (HDL) —"good cholesterol"— transports cholesterol to the liver where is is eliminated from the body. Higher levels of LDL cholesterol are associated with lower cardiovascular risk.

Policosanol Lowers Cholesterol and LDL and Raises HDL

Policosanol is a natural supplement made from sugar cane. A review article published in the *American Heart Journal* reported that: "At doses of 10 to 20 mg per day,

- policosanol lowers total cholesterol by 17% to 21%,
- policosanol lowers LDL cholesterol by 21% to 29%, and
- policosanol raises HDL cholesterol by 8% to 15%.

Daily doses of 10 mg of policosanol have been shown to be equally effective in lowering total or LDL cholesterol as the same dose of simvastatin (Zocor) or pravastatin (Pravachol). At dosages of up to 20 mg per day, policosanol is safe and well tolerated, as studies of >3 years of therapy indicate." The authors concluded that policosanol seems to be a very promising phytochemical alternative to classic lipid-lowering agents such as the statins and deserves further evaluation. [1]

Policosanol Inhibits Platelet Aggregration

Platelets are blood factors that adhere to damaged cells that line blood vessels and stick together (aggregrate) to form a clot which acts to patch the damage. After the injury has been repaired, the body releases substances designed to break down the clot. In a healthy body, a balance is maintained between these opposing chemical messengers (coagulants versus anti-coagulants, vasodilators versus vasoconstrictors, and platelet aggregrators versus platelet aggregrator inhibitors).

"Blood-thinners" (which are also called anti-coagulants) are commonly prescribed for those at risk of cardiovascular disease. Blood thinners are intended to prevent the formation of abnormal clots, which can detach from the vessel wall and cause a stroke or heart attack. Anticoagulants such as Coumadin (Warfarin), and platelet aggregration inhibitors such as aspirin and Clopidogrel (Plavix) are often used to prevent these clots.

Policosanol has been shown to be an effective platelet aggregration inhibitor and may have some advantages over asprin. [2-8] In animal studies, policosanol significantly decreased the size of experimentally-induced venous thromboses. [9, 10]

Policosanol Relieves Intermittent Claudication

The term *claudication* is derived from the Latin word *claudicare* (to limp). Claudication is the feeling of muscle fatigue after a period of minimal exercise of an extremity. The feeling may progress to a cramp-like pain, usually in the calf muscles, that is relieved by resting. The predominant cause of intermittent claudication is blockage of the superficial femoral artery, secondary to arteriosclerosis. The severity of claudication is determined by the measuring the distance people are able to walk.

After six months of policosanol (10 mg twice daily), the the distance patients were able to walk before becoming symptomatic increased from about 132 meters (baseline) to 205 meters. In a second study, the distance increased from 125 meters to 201meters. The second study continued for two years with a final distance increase to 333 meters. [11, 12]

Policosanol inhibits Oxidization of LDL Cholesterol

Oxidized LDL cholesterol can be found in atherosclerotic lesions. Oxidized LDL cholesterol creates a chronic inflammatory response which promotes the destruction of blood vessels. It accelerates lesion progression by enhancing monocyte adhesion and macrophage foam cell generation, which induces the lesion to migrate onto smooth muscle cells. Oxidized LDL cholesterol also contributes to plaque formation by triggering thrombosis and by impairing vasodilation of the arteries. All of these factors contribute to the progression of atherosclerosis, thereby increasing the risk of a heart attack or stroke. Policosanol has been shown to protect against the oxidation of LDL cholesterol. [13]

Conclusion

Elevated cholesterol levels are a major concern for many people, especially when combined with other cardiovascular risk factors. Statin drugs are conventional medicine’s standard of care for these patients, but are associated with side effects and interfere with the production of critical nutrients. Policosanol offers a safe and natural alternative.

It should be mentioned that the specific dose of policosanol required to lower one’s cholesterol levels to acceptable values is very dependant upon the person. Some people react positively with a low dose of 5 mg per day, while others may need 10 or up to 20 mg per day. Regularly checking cholesterol levels and seeking the advice of a knowledgeable holistic physician is highly recommended.

A Note on Supplement Quality

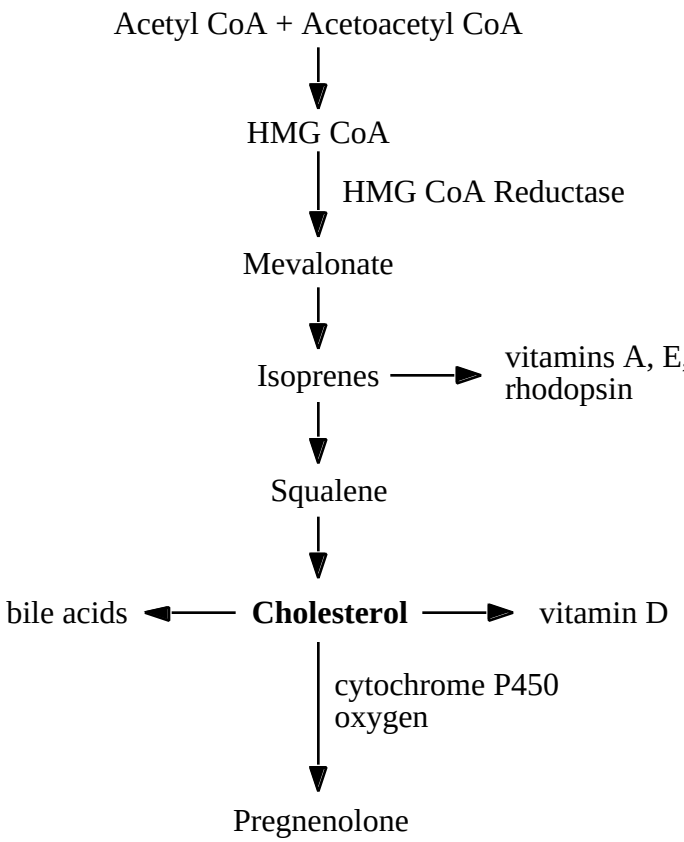
Unfortunately (or fortunately) the nutritional supplement industry is not regulated. On the positive side, beneficial cutting-edge supplements such as policosanol can be made available quickly and inexpensively, especially when compared to the arduous and expensive FDA approval process for prescription drugs. On the negative side, unscrupulous manufacturers can

offer lower-quality supplements at bargain-basement prices. The main researchers of policosanol tested most of the American brands of policosanol and found that few contained what they considered to be the active ingredient. Finding a supplement company that you can trust (such as Vitamin Research Products) should be of primary importance in today's world.

Sidebar - Statin Drugs

"Statin" drugs are the mainstay of orthodox physicians to lower cholesterol levels and reduce cardiovascular risk (Table 1). Statin drugs work by blocking the formation of cholesterol by inhibiting the enzyme HMG-CoA reductase. Although they are very effective and have a number of apparent beneficial effects, Statin drugs are unfortunately associated with a number of side effects such as liver dysfunction, fatigue, and muscle cramps. One statin drug (Baycol) was recently recalled by the FDA after several people died. For many people policosanol is a wonderful alternative to these drugs at a fraction of their price.

Statin Drugs	Side Effects of Lipitor
Lipitor (Atorvastatin) Zocor (Simvastatin) Lescol (Fluvastatin) Mevacor (Lovastatin) Pravachol (Pravastatin)	Muscle disorders, such as leg cramps, myalgia, uncomplicated muscle pain, myopathy and/or rhabdomyolysis, fever, muscle cramps, pain, stiffness, or weakness, unusual tiredness, and myositis, inflammation of muscle Abdominal pain, constipation, diarrhea, dyspepsia (heartburn, indigestion, stomach discomfort), flatulence (belching, excessive gas), skin rash



Tables

Table 3: Policosanol vs. Pravastatin, Lovastatin, and Simvastatin

	Policosanol 10 mg / day	Pravastatin 10 mg / day	Lovastatin 20 mg / day	Simvastatin 10 mg / day
Decrease LDL cholesterol	19.3% 20.4% 24%	15.6%	 16.8% 22%	 15%
Decrease Total cholesterol	13.9% 14.2%	11.8%	 14.0%	
Decrease LDH-HDL Ratio	28.3% 23.7%	18.9%	 14.9%	
Decrease Total cholesterol-HDL	24.4%	15.7%		

Ratio				
Decrease triglycerides	14.1%	N/S		
Increase HDL	18.4% 7.5%	N/S	N/S	
Arachadonic acid, 1.5 mmol/l	42.2%	N/S		
Arachadonic acid, 3 mmol/l	69.5%	27%		
Collagen	16.6%	N/S		

N/S = not significant

Table 4: Summary of policosanol results

	5 mg per day				10 mg per day				20 mg/day
Study	1	2	3	4	5	6	7	8	9
Decr. LDL	17.7%	16.9%	18.2%	11.3%	25.2%	24.4%	25.6%	21.9%	31.2%
Decr. Cholesterol	12.6%	12.8%	13.0%	8%	16.7%	16.2%	17.4%	14.1%	23%
Decr. LDL:HDL	17.0%			15.3%	29.3%	29.1%		25.6%	34.6%
Decr. Chol:HDL	16.7%			12.5%	27.2%	28%		18.4%	
Increase HDL	16.5%	14.6%	15.5%	7.8%	29.3%	29.1%	28.4%	7.2%	8.7%
Decrease Triglycerides							5.2%		

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